

DATA STANDARDS PRIORITIES WORKGROUP REPORT

Executive Summary

The State/EPA Information Management Workgroup (an ongoing partnership between EPA and the Environmental Council of the States) chartered the Environmental Data Standards Council (the Council) in November, 1999. The Council's principle mission is: "to promote the efficient sharing of environmental information between EPA, States, Tribes and other parties through the development of data standards." The Council is committed to the development and adoption of data standards for environmental information exchange.

The council commissioned the Data Standards Priorities Workgroup (the Workgroup) to develop a proposal for future standards development priorities. The attached report summarizes the Workgroup's report to the Council.

On March 15th and 16th, 2000 the Data Standards Priorities Workgroup met in Washington DC to begin work on a priorities list. Following introductory matters and a review of the group's assigned task, the workgroup developed a list of processes that drive a need for data exchange. The resulting list was used as input as the group proposed potential areas for data exchange which could be facilitated by the existence of data standards.

To facilitate development and ranking of potential standards, the workgroup developed selection criteria. A potential standard is a good candidate if it:

- Contributes to Immediate Public Health Protection
- Facilitates Information use Outside Originating Agency or Across Multiple Platforms /Allows Aggregation or use of Information in Secondary and Multiple Environments
- Reduces Cost or Burden to Regulators and to the Regulated / Is a key Anchor, Cross-Cutting Foundation, or Building Block
- Baselines Environmental Information
- Portrays Performance of Programs

The Workgroup proposed nineteen candidate standards. Using the above selection criteria, the Workgroup discussed each proposed standard, providing examples of potential data elements where possible. The Workgroup then prioritized the list of standards for the Council through a multi-voting session. After voting, five standards with the most votes were singled out as being the most critical and achievable. These five standards are:

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| • Permitting | (15 votes) |
| • Enforcement Activities | (12 votes) |
| • Geo-Locational Standards | (11 votes) |
| • Environmental Feature Classification | (9 votes) |
| • Monitoring | (9 votes) |

Following review and incorporation of comments by Workgroup members, the attached draft and this summary will be delivered to the Council. Based on the availability of resources, and subject to review and revision by the Council, it is anticipated that the above issues will be among the first standards to be developed under the auspices of the Council.

I. Background to Meeting

The Environmental Protection Agency (EPA), States, and Tribes are committed to improving data integration and management. To this end, the State/EPA Information Management Workgroup (an ongoing partnership between EPA and the Environmental Council of the States) chartered an Environmental Data Standards Council. The Council's principle mission is: "to promote the efficient sharing of environmental information between EPA, States, Tribes and other parties through the development of data standards." The Council is committed to the development and adoption of data standards.

Two of the Council's initial steps are to review and potentially adopt standards developed under EPA's Reinventing Environmental Information (REI) initiative and decide on a list of future standards. The REI standards under consideration are: Date, Standard Industrial Classification (SIC) Code/North American Industrial Classification System (NAICS), Facility Identification (ID), Latitude/Longitude (lat/long), Chemical ID, and Biological Taxonomy. The Council commissioned a Data Standards Priorities Workgroup (the Workgroup) to develop a proposal for future standards development priorities.

On March 15th and 16th, 2000, the Data Standards Priorities Workgroup met to brainstorm and prioritize potential data standards to propose to the Environmental Data Standards Council. During the course of their discussions, the Workgroup reviewed processes that drive data exchange, developed specific selection criteria to prioritize proposed data standards, and developed a list of 19 possible data standards for Council consideration. Following are details about the process through which the Workgroup accomplished these tasks.

II. Introductions

The Workgroup convened on Wednesday, March 15, 2000 with a welcome by Helen Lottridge, of the Oregon Department of Environmental Quality, and Mark Luttner, of the U.S. EPA Office of Environmental Information (OEI). Ms. Lottridge and Mr. Luttner reiterated the group's mission and encouraged them to think corporately, keeping cross-EPA, State, Tribal, and stakeholder issues in mind while developing recommendations for the Council. Workgroup chairs Mitch West, of the Oregon Department of Environmental Quality and Chris O'Donnell, EPA OEI, reviewed the meeting agenda, operating principles, and objectives of the Workgroup. They emphasized that overarching business processes, rather than individual or organization-specific needs, drive the decision process. Workgroup members were encouraged not to sacrifice good ideas in lieu of perfect ideas, based on the scope of what they were charged with accomplishing in two days.

Bruce Bargmeyer, EPA OEI, began the meeting with a presentation entitled, AData Standards - What Are They? In his presentation, Mr. Bargmeyer provided an overview of the issues associated with developing and using data standards. Among these issues, Mr. Bargmeyer explained:

- the composition of data standards with data elements;
- the importance of universality in the usefulness of data standards;
- examples of standards-setting organizations at the national level, such as the American National Standards Institute (ANSI), and at the international level, such as the International Organization for Standardization (ISO); and
- that many private and public groups are engaged in data standards work.

After Mr. Bargmeyer's presentation, Workgroup co-chair Mitch West briefly discussed past State/EPA data standards work. Mr. West provided information about:

- the current status of environmental data standards within EPA and with States and partners, and how they were developed;
- how EPA has finalized the Date and SIC/NAICS data standards for internal use, while lat/long, Chemical ID, Biological Taxonomy, and Facility ID data standards are in their interim internal EPA approval stage;
- the review and potential adoption process of the REI standards by the Council; and
- the lat/long data standard being a specific example of how an environmental data standard can be adapted from an existing Federal Geographic Data Committee (FGDC) data standard and how EPA saved time and resources by adopting this already existing standard rather than developing an entirely new one.

III. Data Exchange Drivers

After Mr. West's presentation, the Workgroup discussed a detailed list of different processes that drive data exchange. Workgroup members generated and discussed a list of drivers critical to the success of efficient environmental information exchange among partners. Below is the list in no particular order.

- Enforcement information
- Grant information
- Public access
- Reporting to Congress
- Ambient conditions of the environment
- Reduce operations cost
- Environmental indicators/progress
- Regulatory reporting requirements
- Regulatory overlap
- Electronic monitoring
- Informing decision makers
- Freedom of Information Act (FOIA)
- Public outreach

- Endangered Species Act
- Regulation of chemicals
- Policy and regulatory development
- Government Paperwork Elimination Act
- Research and Development
- Planning
- Assessment
- Program management/evaluation/oversight
- Defend Agency/State from litigation
- Transport/migration of pollution
- Emergency notification/response (counter-terrorism)
- Security of data transmissions
- Native American sovereign issues
- Environmental justice
- Smart growth
- Risk assessment
- Permit conditions
- Reduced customer cost
- Watershed protection
- Geospatial analysis
- Health effects/exposure
- Data integration
- Fraud detection
- Total Maximum Daily Loads (TMDLs)
- International coordination
- Development of models
- Community Based Environmental Protection (CBEP)
- Joint partnerships
- Secondary users
- Criminal detection
- Cleanup technologies
- Voluntary reporting requirements
- Brownfields
- Pollution prevention
- Ecosystem protection
- Criteria for standards development
- Chemical and pesticides use
- Environmental management systems (e.g., ISO14001)
- Data analysis/Quality Assurance (QA)
- Remediation

IV. Selection Criteria for Priority Information

On Thursday, March 16, 2000, the Workgroup discussed criteria for assessing data groups for possible standardization. These criteria acted as guidelines for the initial suggestion and subsequent discussion of the candidate standards. To select the criteria for the proposed data standards, the Workgroup members were asked to answer the following question, “This

particular type of information is important to exchange because. . .” The answers to this question helped the Workgroup characterize universal needs for data exchange among EPA and its partners and stakeholders. Seven criteria were generated in this manner, although the group recognized that candidate standards need not meet all seven criteria. Below is a synopsis of each of the criteria generated by the Workgroup.

Contributes to Immediate Public Health Protection

One of the broad selection criteria proposed by the Workgroup was data groups that deal directly with public health. It was generally agreed upon that proposed data standards should be able to immediately contribute to data exchange related to the protection of public health.

Facilitates Information use Outside Originating Agency or Across Multiple Platforms / Allows Aggregation or use of Information in Secondary and Multiple Environments

The Workgroup decided that the degree to which information could be used outside of the originating agency is an indicator of the wide usability of such data. The Workgroup stressed that it is important for the same information to be easily exchanged in multiple environments. This, again, points to the universality of the data groups and would facilitate the exchange of data among agencies and organizations outside of EPA.

Reduces Cost or Burden to Regulators and to the Regulated / Is a key Anchor, Cross-Cutting Foundation, or Building Block

One of the chief goals of EPA, State and Tribal partners is to reduce cost and burden for the regulated, as well as the regulators. To facilitate burden reduction, data standards should have a crosscutting foundation based on common building blocks. These key anchors points, as they were called, would allow for future growth and conceptualization from present standards, thus reducing the level of more detailed standardization needed in the future.

Baselines Environmental Information

Another factor deemed important by the Workgroup included the importance of baseline environmental information exchange. This data should be easily exchangeable to provide information such as ambient conditions in the environment, as well as local environmental stressors.

Portrays Performance of Programs

An additional criteria, as determined by the Workgroup, suggested that proposed data standards should facilitate the overall performance of programs, including the outcomes and outputs. Congressional funding allocations were noted as an example of how easier data exchange related to this effort could pay off.

I. Selecting Information for Which Standards Could be Developed

Nineteen candidate standards were proposed by the Workgroup, using the Workgroup-developed selection criteria. Workgroup members described what they meant by each proposed standard, providing examples of potential data elements where possible. The Workgroup then prioritized the list of standards for the Council through a multi-voting session in which each Workgroup member was given six votes to advocate for any one or multiple candidate standards. After voting, five standards with the most votes were singled out as being the most critical and achievable. These five standards, and the 14 others, in the order of priority they received through voting, are detailed below. Note that some proposals are included for completeness, although they received no votes. The Workgroup expects that new issues will arise which are more critical than items lower on this list.

1. *Permitting* (15 votes)

Comprehensive information covered by this new standard would include some components of date standardization for permitting reports. The Workgroup discussed the importance of standardizing the names associated with different types of permits submitted. The purpose of the permit type standard would be to standardize the nomenclature of permit types, thus preventing permits with similar data from being named differently.

2. *Enforcement Activities* (12 votes)

Components of this standard would include standard terminology used in official documents, such as warning or notification letters. The Workgroup discussed details about enforcement language, with some members noting that consistency between terminology used in enforcement documents and legal documents should be achieved quickly. Also contained within the scope of this standard would be standardization of terms related to case details, Potentially Responsible Parties (PRPs), and status/resolution language, among others.

3. *Geo-Locational Standards* (11 votes)

The Workgroup discussed a geo-locational standard that would include assembling lat/long data beyond the scope of the REI lat/long data standard. This new standard would include more details regarding the secondary use of lat/long data in GIS mapping systems. Examples of geologic data not covered by the current lat/long standard include details on the representation of spatial modeling, such as lines, areas, and polygons, as well as standardization of data related to water well core samples. It might be possible to adopt existing formats for representing linear and polygonal features, including the Federal Geographic Data Committee (FGDC) Spatial Data Transfer Standard.

4. *Environmental Feature Classification* (9 votes)

The Workgroup decided that standards related to environmental descriptors/classification could be useful as this information is shared widely. The Workgroup proposed a standard for land use classification for programs such as Brownfields. Other classification schemes discussed included the marine environment, wetlands, vegetation, and other environmental features of

relevancy. The Workgroup concluded that proposed standards related to this information allows standard identification of environmental features that are non-facilities. This would aid the exchange of information for temporary areas of interest, such as oil or hazardous materials spill sites. Adoption of existing standards for environmental feature classification systems might be possible, including: the FGDC standards for Vegetation Classification (final stage); the Classification of Wetlands and Deep Water habitats (final stage); the Earth Cover Classification System (draft stage); and the Anderson Land Use Classification System.

5. *Monitoring (9 votes)*

The Workgroup agreed on the importance of standardizing terms associated with monitoring techniques and protocols, monitoring sites, and detection wells.

6. *Compliance Evaluations (8 votes)*

The Workgroup voted that a compliance evaluations standard be implemented to standardize terms related to inspection, surveillance, and record/review data.

7. *Toxicity, Hazard and Exposure Information (7 votes)*

The Workgroup proposed that a toxicity, hazard, and exposure information data standard be implemented to effectively exchange information and communicate risk to the public and among regulatory officials.

8. *Risk Management (6 votes)*

The Workgroup agreed that a data standard related to the way in which risk (e.g. cancer risk due to exposure) is communicated could help to reduce contention and confusion over information that regulators produce on the subject of risk.

9. *Tribal and other Geopolitical Identifiers (6 votes)*

The Workgroup discussed the concept of standardizing the exchange of Tribal and other geopolitical identifiers. Each identifier would be standardized by those closest to the data group of concern. Initially, this proposition was raised to create a common naming convention for the 562 Indian tribes active in the country today. The scope of this standard was then broadened to encompass other geopolitical identifiers, such as counties, townships, and states. The group was concerned that the focus on Indian Tribes within the standard not be lost.

10. *Administrative (5 votes)*

The Workgroup proposed a standard for administrative data exchange. This candidate standard would deal with administrative information such as fiscal flow and process dependencies. Examples of data groups that would be standardized through this standard include: grant reporting and processing; generating and querying letters of credit; math requirements; and security mapping.

11. *Technical Electronic Documents (4 votes)*

The Workgroup proposed a data standard for elements of technical electronic documents. This standard would establish meta-data elements across common technical documents, such as Internet pages, and indexing tools. Examples of the most common data elements to be included in this standard would include such things as: name; author; document number; and date.

12. *Regulatory Interest (4 votes)*

The Workgroup proposed a standard for reporting about regulatory interests. This standard would be based on information about point sources that are not listed as actual facilities. Examples of these sources might include: air stacks; hot spots; water pipes; chemical storage tanks; or sub-facility features.

13. *Standard Industrial Classification (SIC) Code/ North American Industrial Classification System (NAICS) Crosswalk (4 votes)*

The Workgroup nominated SIC/NAICS as a candidate standard even though it has already been finalized as an REI standard. The group felt that even though the standard is “complete”, more work needs to be done to ensure that mapping between the two industrial classification codes is possible.

14. *Communities of Interest (3 votes)*

The Workgroup proposed a geo-political data standard based on communities of interest. This standard would differ from the #9 Tribal and Other Geopolitical Identifiers standard in that it would focus on communities and regions of interest based on such things as: racial demographics and environmental toxics sensitivity.

15. *Geo-Referencing Standards (2 votes)*

The Workgroup nominated a standard specifically for waterbody reach, watershed, or airshed geo-referencing information exchange. Standardized methods could be built around existing methodology being employed by Office of Water in geo-referencing information to National Hydrography Dataset reaches and the Hydrologic Unit Code watersheds.

16. *Cultural and Archeological Resources (1 vote)*

The Workgroup proposed a cultural and archeological resources standard for development. This standard would identify and standardize naming conventions for such things as: sacred Tribal sites; burial grounds; historical sites; or religious sites.

17. *Financial (1 vote)*

Members of the Workgroup proposed a financial data standard for exchanging data about fines, fees, and penalties imposed by regulatory officials.

18. Chemical Ingredient Usage Information (0 votes)

The Workgroup proposed a chemical ingredient usage information standard. This standard would address data elements associated with pesticides and other chemicals, and their sales data. Chemical survey question standards were also placed under this standard.

19. Restoration/Remediation (0 votes)

The Workgroup proposed that some cleanup programs may require restoration/remediation data standards. This standard would address reporting issues for volumetric analysis, such as amounts of water treated or acres of land affected, as well as a quality versus quantity analysis of remediated/contaminated sites.

IV. Concerns/Issues

Some of the issues raised by the Workgroup during the meeting were deemed to be crucial to the success of environmental programs, but were out of the scope of the Workgroup's mission. These issues included:

- Fundamental information building blocks across all types of information may be missing. These building blocks, if missing, would hamper the growth and implementation of new standards;
- Identifying data gaps needed to solve current and/or future environmental problems are as critical an effort as sharing what is now being collected;
- Proposing additional data collection requirements could increase burden on regulators and the regulated;
- Enforcement, compliance, and permitting data, represent different groups of data, but are inherently interconnected through the data they share. The data groups themselves are too large to be developed as one unified standard but the Council should recognize their interconnectivity; and
- Standards should be useable across a variety of technical platforms and trading partners.